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SURVEY OF HARDWOOD DEFOLIATION IN THE TURTLE MOUNTAINS, NORTH DAKOTA

by

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ABSTRACT

A looper, probably the Bruce spanworm, *Operophtera bruceata* (Hulst),[1/] defoliated more than 15,650 acres of quaking aspen in the Turtle Mountains of North Dakota in the spring of 1973.

INTRODUCTION

Infestations of the Bruce spanworm, *Operophtera bruceata* (Hulst), have been relatively rare in the Northern Region up to 1972. In 1972, adult moths were collected around lights in Coeur d'Alene, Idaho, and in the spring of 1973, personnel of the North Dakota Forest Service and the U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Shelterbelt Laboratory in Bottineau, North Dakota, reported that quaking aspen, *Populus tremuloides* Michx., in the Turtle Mountains north of Bottineau were being severely defoliated by looper larvae that resembled the Bruce spanworm. Larvae were collected and are being reared at the Shelterbelt Laboratory, Rocky Mountain Forest and Range Experiment Station, for identification. Also present in infested areas was the linden looper, *Erannis tiliaria* Harr.

METHODS

An aerial survey of the Turtle Mountains and forested areas around Walhalla, North Dakota, was flown on June 27 in a Cessna 182. Several of the defoliated areas mapped from the air were examined on the ground.

1/ Lepidoptera: Geometridae

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EXPERIMENT STATION

The survey was a few weeks too late because the defoliated aspen had sprouted new leaves, but this new foliage was readily distinguishable from the air.

RESULTS

Infested stands of aspen were entirely within the Turtle Mountains (figs. 1 and 2). More than 15,640 acres were defoliated during the spring of 1973. Some feeding could be seen on almost all aspen outside the areas mapped from the air. Ground examinations indicated the larvae had already pupated. The Bruce spanworm pupates in cocoons in the soil or duff and adults emerge in the fall. Wingless females climb trees and lay their eggs in bark crevices or other concealed places. The winter is spent in the egg stage and eggs hatch in early spring.

DISCUSSION

There is no registered control for the Bruce spanworm. Laboratory, field, and pilot tests would have to be made before an insecticide could be used operationally against this looper.

An egg mass survey should be made this fall or winter to estimate the population trends for 1974.

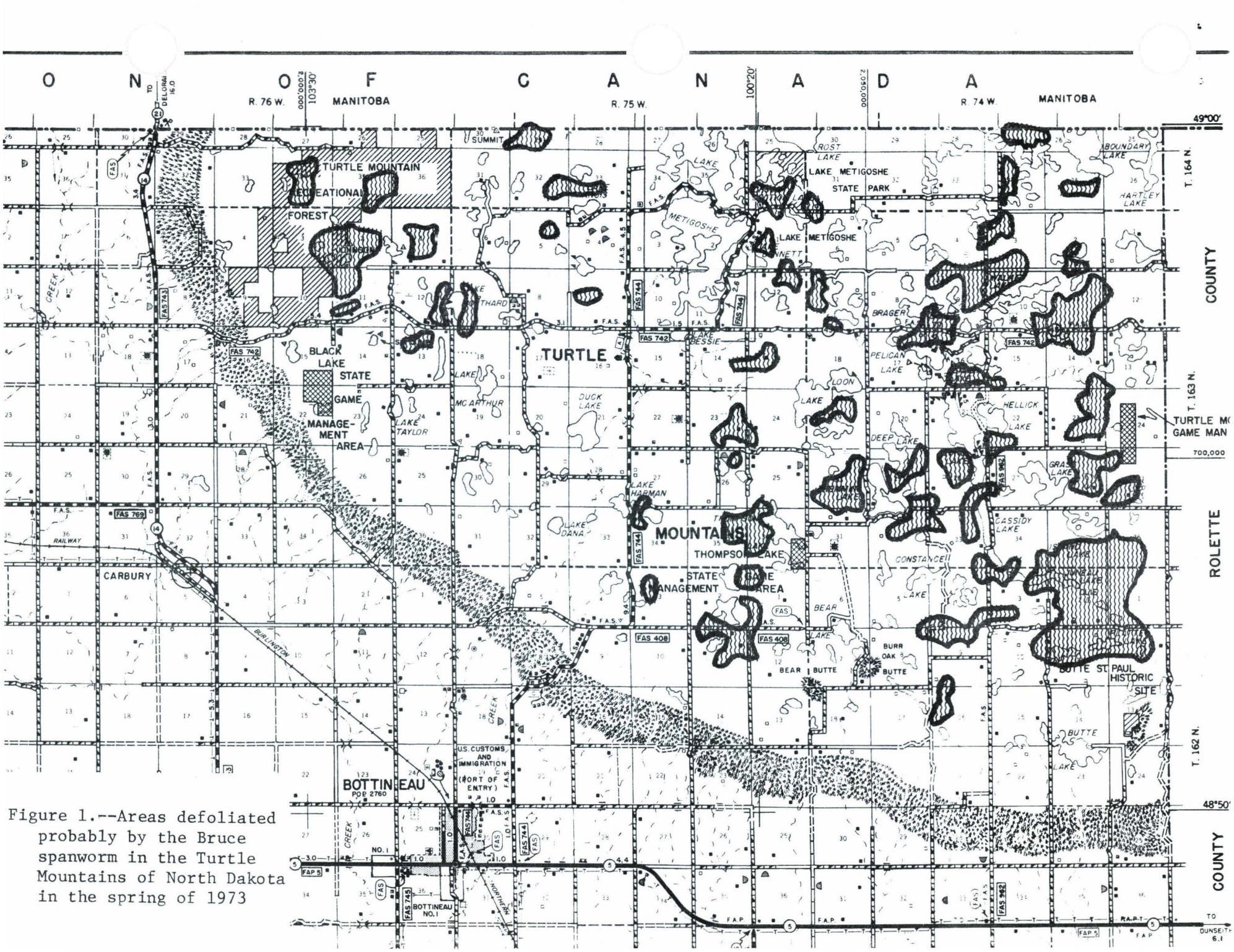

Figure 1.--Areas defoliated probably by the Bruce spanworm in the Turtle Mountains of North Dakota in the spring of 1973

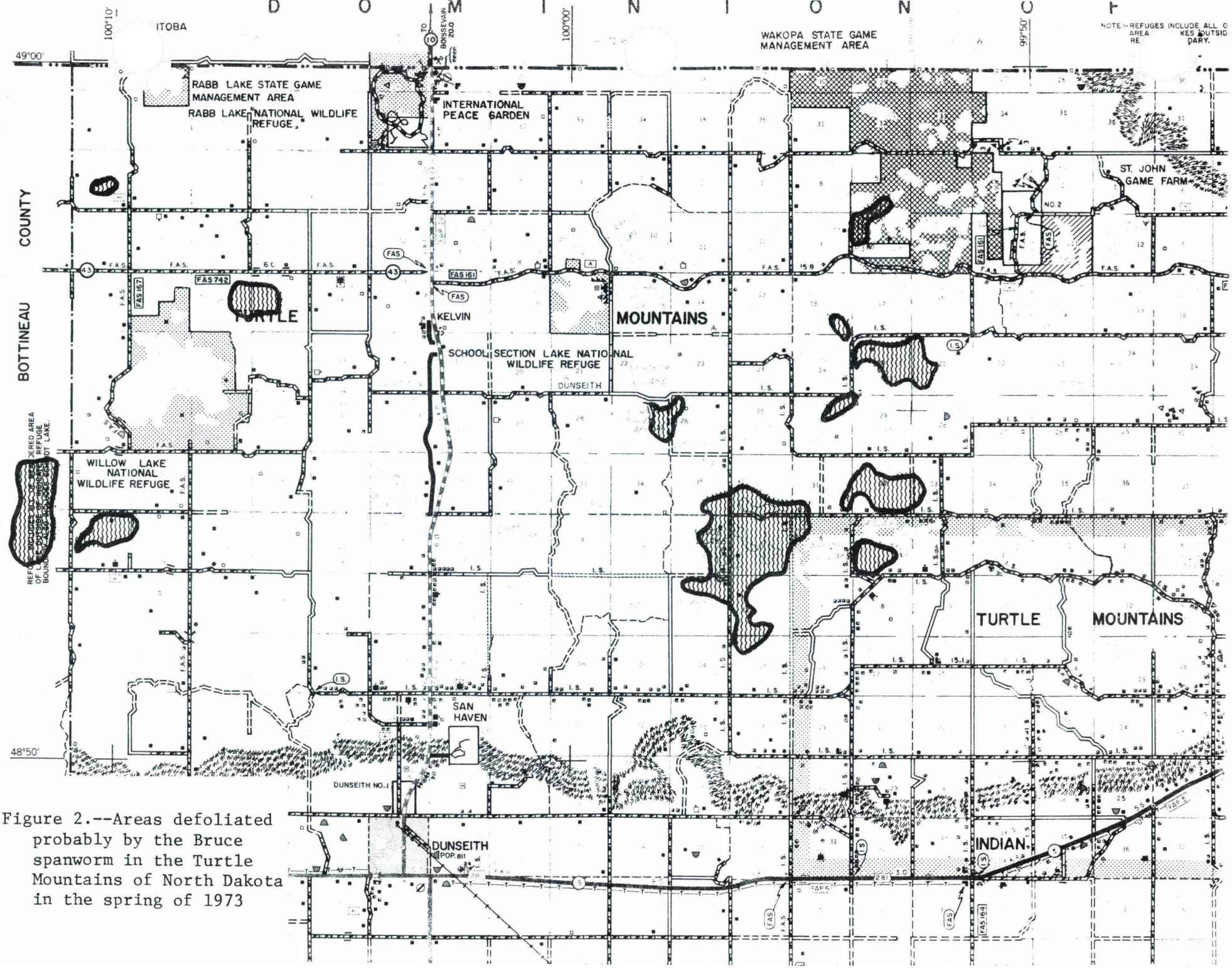

Figure 2.--Areas defoliated probably by the Bruce spanworm in the Turtle Mountains of North Dakota in the spring of 1973